

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

AUTOMOTIVE TECHNOLOGIES)	
INTERNATIONAL, INC.,)	
)	
Plaintiff,)	
)	
v.)	Civil Action No.
)	06-CV-15756
)	Hon. Robert H. Cleland
SIEMENS VDO AUTOMOTIVE CORP.,)	
et al,)	
)	
Defendants.)	

**DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF NON-ENABLEMENT OF
CLAIMS OF U.S. PATENT NOS. 7,025,379; 7,052,038; AND 7,070,202 AND 6,850,824**

Defendants Continental Automotive Systems US, Inc, TRW Automotive US, LLC, TK Holdings Inc., Nissan North America, Inc., Hyundai Motor America and Kia Motors America, Inc. (herein "Joint Defendants"), by their attorneys, DLA Piper U.S. LLP, Bingham McCutchen LLP, Jenner & Block LLP, Akin Gump Strauss Hauer & Feld LLP and Dickinson Wright PLLC, move, pursuant to F.R.C.P. 56, for Summary Judgment of Non-Enablement of Claims of U.S. Patent Nos. 7,025,379; 7,052,038; 7,070,202 and 6,850,824. In support of their Motion, Joint Defendants rely on the accompanying Brief in Support, its attached exhibits, and pleadings on file with the Court.

Pursuant to the local rules of this Court, counsel for Joint Defendants sought concurrence in the relief requested from Plaintiff, but such concurrence was not forthcoming.

WHEREFORE, the Joint Defendants respectfully request that the Court grant their Motion for Summary Judgment in its entirety and enter a Judgment in Defendants' favor.

July 1, 2009

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DETROIT 44403-5 1118541v1

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AUTOMOTIVE TECHNOLOGIES
INTERNATIONAL, INC.

Plaintiff,

v.

SIEMENS VDO AUTOMOTIVE CORP.,
et al.,

Defendants.

Civil Action No.
06-CV-15756
Judge Cleland

**DEFENDANTS' BRIEF IN SUPPORT OF THEIR MOTION
FOR SUMMARY JUDGMENT OF NON-ENABLEMENT OF CLAIMS
OF U.S. PATENT NOS. 7,025,379 7,052,038, 7,070,202, AND 6,850,824**

ISSUE PRESENTED

Whether the asserted claims of U.S. Patent Nos. 7,025,379 (“the ‘379 patent”), 7,052,038 (“the ‘038 patent”), 7,070,202 (“the ‘202 patent”), and 6,850,824 (“the ‘824 patent”) should be found invalid for failing the enablement requirement when claims have been read to cover electronic side impact crash sensors and the patent disclosures provide virtually no information that would allow one skilled in the art to practice the invention for such electronic sensors.

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I. INTRODUCTION

All patents must enable one skilled in the art to practice the invention that is claimed. That is the tradeoff of a patent. A patentee receives a limited monopoly in exchange for disclosure of the invention, thereby advancing the arts. ATI was obliged to enable the asserted claims of the '379, '038, '202, and '824 patents, each drawn to electronic side impact sensor systems that initiate occupant restraint devices in the event of a crash, so that one skilled in the art could make and use the invention. The patents fail to teach how to make or use the electronic side impact sensor systems, in particular how an airbag initiates based on output of a movable mass (accelerometer) in a side impact sensor. Instead the patents are filled with un-detailed drawings and conclusory descriptions that merely restate the claim language without providing any detail.

The failure to enable the asserted claims of the '379, '038 and '202 patents to David Breed et al. is not unlike the lack of enablement addressed in the prior litigation involving Breed et al.'s '253 patent, also directed to side impact crash sensors. In that case, the '253 patent was properly found invalid for failing to enable an electronic sensor because it failed to provide sufficient information to explain how the electronic sensor operated to properly detect a side impact. The '253 patent included but a single paragraph directed to electronic sensors and a "conceptual" drawing that amounted to one rectangle drawn inside another. (Ex. A, Fig. 11, col. 10:3-14.) As a result, this Court found that the '253 patent was not-enabled because it failed "to show any output from the generically referenced sensing circuitry and fail[ed] to describe how the output from this general sensing technology could be processed to achieve the desired and novel characteristics of the invention, including how to achieve the desired response characteristics for the side impact sensor," *Automotive Technologies Int'l v. BMW of North America, Inc.*, 378 F.Supp.2d 780, 815 (E.D.Mich. 2005) (Cleland, J.) ("ATI I"). The Federal

Circuit agreed with this conclusion. *ATI v. BMW of North America, Inc.*, 501 F.3d 1274, 1283 (Fed. Cir 2007).

The lack of disclosure in this case is no different. Here ATI claims that the asserted '038 (Ex. B), '379 (Ex. D), and '202 patents (Ex. C) ("the side impact sensor systems patent family") are entitled to a filing date of a prior application that was filed on September 16, 1993 and which issued as U.S. patent 5,842,716 (the "'716 patent") (Ex. F). ATI contends that the '716 patent's written description provides enough enabling disclosure to support all of the claims of the patents at issue. The '716 patent, however, compared to the '253 patent, provides virtually no additional information relating to how sensor output can be processed "to achieve the desired response characteristics" for side impact sensing. Indeed, even though the asserted claims allegedly embrace or specifically call for a side impact crash sensor that uses an algorithm to determine if the vehicle is experiencing a crash, the '716 patent does not mention, let alone describe, an algorithm or other mechanism that can analyze data from a side accelerometer to determine whether to fire an airbag. The '716 patent therefore fails to provide an enabling disclosure for the same reasons the '253 patent did.

After the '716 patent, the next application in the side impact sensor systems patent family that ATI claims priority to was filed for on July 14, 1998 and issued as U.S. Patent No. 6,419,265 (the "'265 patent") (Ex. G). The '265 patent was filed as a "continuation-in-part" of the '716 patent, and therefore included new matter. The added disclosure in the '265 patent concerning the electronic sensor in essence boils down to the following statement: "an algorithm in the micro-processor may be designed to determine whether the movement over time of the sensing mass results in a calculated value which is in excess of the threshold value based on the signal." (Ex. G, col. 15, lines 39-43.) While the '265 patent purports to disclose "an algorithm,"

it does not describe what it is, how it is invoked, and the steps that would be involved in performing the algorithm. There is no disclosure in the text or figures as to what the algorithm should be, what the threshold value is, or how the algorithm would determine what the “calculated value” is. Essentially, ATI did nothing in the ‘265 patent to attempt to cure the enablement defects other than to provide this conclusory and incomplete description that merely restates the claim language without providing any detail. Such description provides no further guidance to one skilled in the art to practice an electronic side impact crash sensor than did the ‘716 patent.

Only one more continuation-in-part application was filed in this patent family, which issued as U.S. Patent No. 6,685,218 (the “‘218 patent”) (Ex. H). The new matter disclosed in the ‘218 patent had nothing to do with the description of the electronic crash sensor or how the algorithms or other mechanism could work to determine when to actuate an airbag in the event. All subsequent patents in this patent family, including the ‘038, ‘379 and ‘202 patent at issue, were continuation patents and therefore, by definition, presumably included no new information. Accordingly, ATI cannot point to any new matter in the later filed ‘218, ‘038, ‘379 or ‘202 patents that would cure the lack of enablement in the ‘716 and ‘265 patent disclosures.

Finally, the ‘824 patent (Ex. K), which is from a different patent family than the asserted ‘038, ‘379 and ‘202 patents, also fails to provide sufficient disclosure to enable an electronic crash sensor system for detecting side impacts. Incredibly, the ‘824 patent contains *even less disclosure* than is found in the other asserted patents and Breed’s non-enabled ‘253 patent on how to properly detect a side impact warranting deployment of occupant restraint apparatus. Although the ‘824 patent purports that the invention “relates to methods and apparatus for controlling an occupant restraint system in a vehicle based in part on the diagnosed state of the

vehicle in an attempt to minimize injury to an occupant” the actual description of the invention in the specification deals with very different technology. In fact the *only* disclosure relating to this application is found in just a few passages in the entire 86 page patent. (Ex. K, col. 80, line 27 – col. 81, line 47.) That description fails to specify any kind of algorithm or processing circuitry that could be suitably used for detecting a side impact requiring deployment of an occupant restraint system. Indeed, its fails to even state – let alone sufficiently teach - that the system can be used for side impact crash detection.

Because the asserted patents fail to provide any relevant information above and beyond what was found non-enabling in the ‘253 patent, no genuine issue of material fact exists that the asserted claims are invalid for failing to comply with the enablement requirement of 35 U.S.C. § 112 ¶ 1. Indeed, this matter has virtually already been argued and decided in ATI I.

II. MATERIAL UNDISPUTED FACTS

A. All Asserted Claims Encompass Side Impact Sensor Systems With Electronic Sensors

There is no question that ATI agrees that the asserted claims encompass side impact sensor systems that have electronic sensors. This must be the case, as all of Defendants accused products have electronic sensors. As ruled in ATI I, electronic side impact sensors are not just another known species of sensor, but are a distinctly different sensor compared with the mechanical side impact sensor. *ATI I*, 501 F.3d at 1285 (Fed. Cir. 2007). Thus, in order to fulfill the enablement requirement, the specification must enable the full scope of the claims that includes both electronic and mechanical side impact sensors.

B. Asserted Claims Require Some Logic Or Mechanism to Actuate an Airbag Based on Movement of Mass in an Electronic Sensor

The asserted claims can be read to cover electronic sensors that include a moveable mass. Further, each of the asserted claims are directed to an occupant restraint that can be actuated

based on the moveable mass. Prior to actuation of the occupant restraint, however, the claimed invention requires something that determines when to actuate the airbag based on the movable mass. For example in the '038 patent, claim 1 recites a sensor having a movable mass with "movement of said mass being monitored such that said sensor initiates deployment of said occupant restraint based on movement of said mass." (Ex. B, col. 16, lines 61-64.) Similarly, claim 1 of the '202 patent recites that when there is "movement of said mass in excess of the predetermined threshold value, said inflator is actuated and said airbag is inflated and expelled through said opening into the passenger compartment." (Ex. C, col. 17, lines 56-59.) Finally, claim 1 of the '379 patent explicitly calls for an electronic sensor that includes a signal generating means "for generating a time-varying signal representative of movement of said sensing mass, analyzing the signal representative of the movement of said sensing mass and generating a deployment signal based thereon." (Ex. D, col. 17, lines 36-40.)

C. Disclosure of the 5,842,716 patent

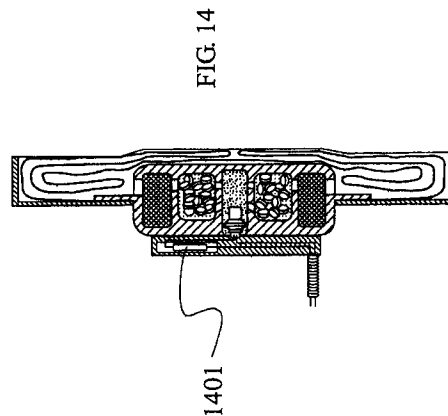
The '716 patent, filed September 16, 1993, is the earliest parent application of all patents at issue. ATI asserts that the '716 patent supports all of the asserted claims of the '038, '379 and '202 patents. (Ex. E (Response to Interrogatories 1-6) at 3.) The vast majority of the disclosure in the '716 patent – like the '253 patent – relates to mechanical and electro-mechanical sensors and has little disclosure concerning electronic sensors. The '716 patent has only three paragraphs related to electronic sensors, two of which merely disclose how the electronic sensor assembly is connected to a power source and a diagnostic module and have nothing to do with side impact crash sensing. The only paragraph having anything to do with the crash sensor itself reads as follows:

FIG. 14 is a cross section view of a self contained side impact airbag system using an electronic sensor. An electronic sensor is one in which the motion of the sensing mass is typically continuously monitored with the signal electronically

amplified with the output fed into an electronic circuit which is usually a micro-processor. Electronic sensors typically use accelerometers use accelerometers which are usually make use of strain gage or piezo-electric elements shown here as 1401 [sic in original.] Modern accelerometers are sometimes micro-machined and combined with other elements on an electronic chip. In electromechanical sensors, the motion of the sensing mass is typically measured in millimeters and is much larger than the motion of the sensing mass in electronic sensors where the motion is frequently measured in microns.

(Ex. F, col. 9, lines 51-65.)

As seen above, the '716 patent fails to disclose any algorithm that could be used to properly detect a side impact crash. Indeed, the word "algorithm" is not even mentioned. The paragraph merely states that electronic sensors have accelerometers which are monitored by an electronic circuit, typically a micro-processor. There simply is no description of how an airbag is actuated based on the electric output of an accelerometer through any circuitry, an algorithm, or other mechanism. The figure allegedly disclosing the electronic sensor, Figure 14, does not fill in the gaps:



The "electronic sensor" is designated in the patent as item 1401. As seen above, sensor 1401 is nothing but a rectangular box that gives absolutely no detail about the sensor and how it would operate to determine if the vehicle is experiencing a crash requiring deployment. Figure 15 (below), likewise fails to provide any details about what the electronic sensor (item 1541) constitutes and how it operates:

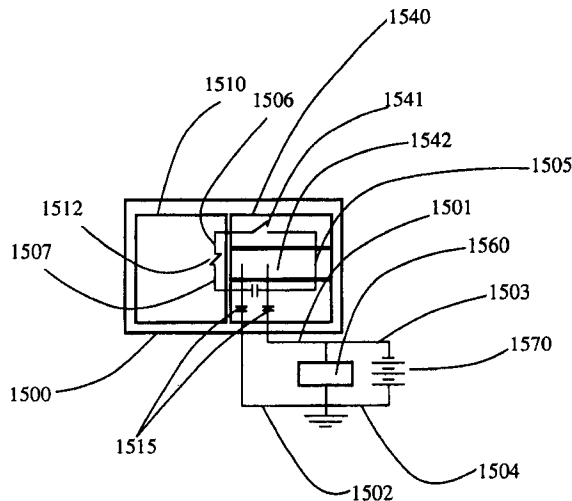


FIG. 15

Much like Figure 14, the sensor assembly of Figure 15, reference number 1540, is merely a featureless square, providing no disclosure as to how an accelerometer can ignite an airbag. The sensor of this figure, reference number 1541, adds a square circuit that can be open and closed, but no description as to how or when the circuit should be open or closed. The corresponding text (repeated below) accompanying Figure 15 does not add anything relating to how to actuate an airbag:

FIG. 15 is a schematic of the electric circuit of an electro-mechanical or electronic side impact airbag system. The self-contained module implementation shown generally at 1500 contains a sensor assembly 1540 and an airbag and inflator assembly 1510. The sensor assembly 1540 contains a sensor 1541, a diagnostic module 1542, an energy storage capacitor 1543, and a pair of diodes 1515 to prevent accidental discharge of the capacitor if a wire becomes shorted. The module is electrically connected to a diagnostic monitoring circuit 1560 by wire 1501 and to the vehicle battery 1570 by wire 1503. It is also connected to the vehicle ground by wire 1502. The sensor, diagnostic and capacitor power supplies are connected to the squib by wires 1505 through 1507.

In a basic configuration, the diagnostic monitoring circuit 1560 checks that there is sufficient voltage on the capacitor to initiate the inflator in the event of an accident, for example, and either of wires 1501, 1502, 1503 or 1504 are severed. In this case, the diagnostic internal to the self-contained module would not be

necessary. In more sophisticated cases, the diagnostic module 1542 could check that the squib resistance is within tolerance, that the sensor calibration is correct (through self testing) and that the arming sensor has not inadvertently closed. It could also be used to record that the arming sensor, discriminating sensor and airbag deployment all occurred in the proper sequence and record this and other information for future investigative purposes. In the event of a malfunction, the diagnostic unit could send a signal to the monitoring circuitry that may be no more than an indication that the capacitor was not at full charge.

(Ex. F, col. 10, lines 1-30.)

As seen above, the first paragraph merely concerns how the sensor system is connected to a diagnostic module and battery. The second paragraph further discusses how diagnostics can check the module for various issues such as calibration. Nowhere, however, is there disclosure of algorithms, moveable masses exceeding threshold values or any way to actuate an occupant restraint device based on mass moving above a threshold in an electronic sensor system. The rest of the patent disclosure discusses mechanical or electro-mechanical patents only.

D. Disclosure of the 6,419,265 patent

The application that issued as the '265 patent is a continuation-in-part of the '716 patent, and was filed on July 14, 1998. (Ex. G.) The '265 patent has the same Figures 14 and 15 as the '716 patent and adds no additional figures to disclose how an electronic sensor ignites an airbag. Other than to say the sensor can include a "piezo-electric element," the specification of the '265 patent, describing Figures 14 and 15, adds little information about electronic sensors above and beyond what is in the '716 patent, including the following:

- The signal representative of the motion of the sensing mass is recorded over time and an algorithm in the micro-processor may be designed to determine whether the movement over time of the sensing mass results in a calculated value which is in excess of the threshold value based on the signal. The sensing mass may constitute part of the accelerometer, e.g., the sensing mass is a micro-machined acceleration sensing mass. In this case, the microprocessor determines whether the movement of the sensing mass over time results in an algorithmic determined value that is in excess of the threshold value based on the signal. (Ex. G, Col. 15, lines 37-48.)

- In embodiments using an electronic sensor, the inflator may include a primer which is part of an electronic circuit including the accelerometer such that upon movement over time of the sensing mass results in a calculated value in excess of the threshold value, the electronic circuit is completed thereby causing ignition of the primer. (Ex. G, Col. 15, lines 49-54.)

As demonstrated above, essentially all that the ‘265 patent adds to the disclosure of the electronic crash sensor is that a “signal representative of the motion of the sensing mass is recorded over time and an algorithm in the micro-processor may be designed to determine whether the movement over time of the sensing mass results in a calculated value which is in excess of the threshold value based on the signal.” (*Id.*, at 37-43.) The ‘265 patent indicates that an algorithm can be used in the side impact crash sensor – it fails to disclose *how it would be used* to properly detect whether the vehicle is experiencing a crash sufficient to warrant deployment of an airbag. Tellingly, there is no description of what the algorithm is, how the “calculated value” is determined, or what the threshold value is.

E. Disclosure of the 6,685,218 patent

The next application in the side impact sensor system patent family was filed for on November 8, 1999 and issued as the ‘218 patent. (Ex. H.) The new matter in this application was largely directed to some language that attempted to alter the ‘self-contained’ airbag system limitations of the prior applications to non-self-contained systems. The patent included no new information concerning electronic sensors, such as how an algorithm or other logic mechanism would be used to determine when to actuate an airbag based on movement of a moveable mass.

Notably, during the prosecution of this patent, ATI continued to indicate that side impact crash sensing was a new field of art and, specifically, that the use of a movable mass for sensing side impacts was novel. For example, ATI responded to the Patent Office’s rejection of the claims over the prior art by representing that “use of a mass whose movement is used for sensing

side impacts is novel over the prior art.” (Ex. I (Response to Office Action dated September 11, 2002) at 2 and 3 (emphasis in original).) ATI also represented in a later response the following:

[There] is a very significant difference in response times between frontal impact crash sensor and side impact crash sensors.

* * *

Side impact crash sensors which are triggered based on only acceleration in the lateral direction require a very short trigger time since the distance between the exterior of the vehicle and the passenger compartment is relatively small. In comparison, frontal impact crash sensors can have a relatively long trigger time since there is a relatively large distance between the front of the vehicle and the passenger compartment [.]

* * *

[I]nertial sensors were not historically considered to be useful for sensing acceleration in only a lateral direction resulting from the side impacts in view of a slow actuation of such inertial sensors.

(Ex. J (Response to Office Action dated August 28, 2003) at 10, 11-12.)

Accordingly, ATI continued to represent that the concept of using a movable mass for side impact crash sensing (i.e., using inertial sensors) during prosecution of the side impact sensor system patent family was a new field of use, just as it had for the ‘253 patent it prosecuted earlier.

F. Disclosure of the 7,052,038, 7,025,379 and 7,070,202 Patents

The ‘038, ‘379, and ‘202 patents were all filed as “continuation” applications, claiming priority to the application that issued as the ‘218 patent and the earlier applications discussed above. The patents fail to provide any additional disclosure concerning electronic crash sensors above and beyond what was described in the ‘218 and earlier applications and presumably do not include new matter as they were filed as “continuation” applications, for which the addition of new matter is prohibited.

G. Disclosure of the 6,850,824 Patent

Although ATI contends that the asserted '824 patent claims cover side impact crash sensors, the specification contains virtually no description in this regard and the vast majority of the patent deals with very different technology.¹ The only disclosure relating to this application is found in only a few passages in the entire 86 page patent:

The state of the vehicle diagnosed by the processor may also be a determination of a location of an impact between the vehicle and another object. In this case, the processor can forecast the severity of the impact using the force/crush properties of the vehicle at the impact location and control an occupant restraint or protection device based at least in part on the severity of the impact.

* * *

A method for controlling a part of the vehicle in accordance with the invention comprises the step of mounting a plurality of sensor systems at different locations on the vehicle, measuring a state of the sensor system or a state of the respective mounting location of the sensor system, diagnosing the state of the vehicle based on the measurements of the state of the sensor systems or the state of the mounting locations of the sensor systems, and controlling the part based at least in part on the diagnosed state of the vehicle. The state of the sensor system may be any one or more of the acceleration, angular acceleration, angular velocity or angular orientation of the sensor system. Diagnosis of the state of the vehicle may entail determining whether the vehicle is stable or is about to rollover or skid and/or determining a location of an impact between the vehicle and another object. Diagnosis of the state of the vehicle may also entail determining angular acceleration of the vehicle based on the acceleration measured by accelerometers if multiple accelerometers are present as the sensor systems.

(Ex. K, col. 80, line 2 – col. 81, line 47.)

¹ This technology includes the use sensors in a vehicle for various purposes completely unrelated to detecting side impacts, such as chemical sensors to detect whether there is blood in the vehicle (Ex. K, col. 25, lines 53-59); sensors to control the heating system (*Id.*, col. 26, lines 42-44); “health state determining means” to determine whether the driver is having breathing difficulties, is falling asleep or whether the driver’s breath contains alcohol (*Id.*, lines 56-63; col. 78-79); carbon dioxide sensors to detect the presence of a child or animal trapped in the trunk (*Id.*, col. 59, lines 29-37); sensors to detect the presence of a child or animal left in a vehicle where the temperature as dropped or risen to an unsafe level (*Id.*, col. 27, lines 54-62); measuring systems to detect the amount of fuel (*Id.*, col. 54, lines 48-51); and keyless entry systems (*Id.*, col. 57, lines 64-67) and various other technologies.

As seen above, the '824 patent provides no detail on how to construct and build a suitable system to properly detect an impact to the side of the vehicle, fails to disclose a suitable algorithm or other processing circuitry that could be used to properly detect side impacts using electronic sensors and does not even mention side impact crash sensing. Accordingly, the '824 patent provides even less relevant disclosure than is found in the other asserted patents and the non-enabled '253 patent.

III. ARGUMENT

A. Defendants Summary Judgment Motion Presents A Question Of Law

Defendants are entitled to summary judgment of invalidity "if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that [Defendants are] entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c). "[T]he mere existence of *some* alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment; the requirement is that there be no *genuine* issue of *material* fact." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247-248 (1986); *Scott v. Harris*, 550 U.S. 372, 380 (2007). Whether a patent satisfies the enablement requirement must be shown by clear and convincing evidence and, importantly, "is a *question of law* based on underlying facts." *AK Steel Corp. v. Sollac*, 344 F.3d 1234, 1238 (Fed. Cir. 2003) (emphasis added). Indeed, the Court may appropriately grant summary judgment based on the issue of invalidity for lack of enablement. *Id.* at 1245 (affirming grant of summary judgment of invalidity for lack of enablement); *see also Nat'l Recovery Techs., Inc. v. Magnetic Separation Sys., Inc.*, 166 F.3d 1190, 1198 (Fed. Cir. 1999) (same); *Automotive Technologies Int'l v. BMW of North America, Inc.*, 378 F.Supp.2d 780, 821 (E.D.Mich. 2005) (Cleland, J.), *aff'd*, 501 F.3d 1274, 1285 (Fed. Cir. 2007); *Automotive Techs. Int'l, Inc. v. Delphi*

Corp., No. 03-71368, slip op. at 61-62 (E.D. Mich. Sep. 29, 2004) (Zatkoff, J.) (granting summary judgment of invalidity for lack of enablement with respect to one claim of the patent-in-suit).

B. An Enabling Disclosure Is Required For A Patent Monopoly

The enablement requirement stems from § 112 of the Patent Act:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same ...

35 U.S.C. § 112, ¶1 (emphasis added). Significantly, the enablement requirement “insure[s] adequate and full disclosure so that upon the expiration of the [patent term] ‘the knowledge of the invention inures to the people, who are thus enabled without restriction to practice it and profit by its use.’” *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 480-81 (1974); *see also AK Steel*, 344 F.3d at 1244 (“[A]s part of the *quid pro quo* of the patent bargain, the applicant’s specification must enable one of ordinary skill in the art to practice the full scope of the claimed invention.”). The enablement requirement applies to all types of claim limitations, including those in means-plus-function format. *See In re Hyatt*, 708 F.2d 712, 714 (Fed. Cir. 1983) (holding that a means-plus-function limitation directed to a single means was unpatentable for failing to satisfy the enablement requirement).

1. Legal Standard for the Enablement Requirement

To satisfy the enablement requirement, “the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without ‘undue experimentation.’” *Genentech, Inc. v. Novo Nordisk, A/S*, 108 F.3d 1361, 1365 (Fed. Cir. 1997) (quoted in *ATI II*, 501 F.3d at 1283 (Fed. Cir. 2007); *see also Emergency Fuel, LLC v. Penzoil-Quaker State Co.*, 71 Fed.Appx. 826 (Fed. Cir. 2003) (finding patents not enabled because the specification only generally taught one skilled in the art how increase fuel octane, and did not teach

how to specifically obtain an octane rating of 86). The relevant time frame in analyzing whether a specification is sufficiently enabling is “the effective filing date” of the patent application. *AK Steel*, 344 F.3d at 1244.

Moreover, “the essence of the enablement requirement” is that “[p]atent protection is granted for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable.” *Genentech*, 108 F.3d at 1366. Although “a specification need not disclose what is well known in the art,” “[t]ossing out the mere germ of an idea does not constitute enabling disclosure.” *Id.* Thus, a disclosure fails to satisfy the enablement requirement where it reveals that the inventor only predicted, rather than invented, the subject matter that the patent claims. *Harris Corp. v. IXYS Corp.*, 114 F.3d 1149, 1156 (Fed. Cir. 1997) (“[B]ecause the applicants’ disclosure does not teach a person having ordinary skill in the art how to make [the claimed invention,] the most we can credit them with is having predicted—rather than invented—such a device.”). A specification that merely “provides a starting point from which one of skill in the art can perform further research in order to practice the claimed invention” does not fulfill the enablement requirement. *Nat’l Recovery*, 166 F.3d at 1198.

2. The Specification—Not the Knowledge of One Skilled in the Art—Must Supply the Novel Aspects of an Invention

As the Federal Circuit has held, “[i]t is the specification, not the knowledge of one skilled in the art, that must supply the novel aspects of an invention” to fulfill the enablement requirement. *Genentech*, 108 F.3d at 1366. In *Genentech*, the patent-in-suit claimed a method for producing human growth hormone (“hGH”) using a process called “cleavable fusion expression.” *Id.* at 1363. However, the specification of this patent did “not describe in any detail whatsoever how to make hGH using cleavable fusion expression.” *Id.* at 1365. The Federal Circuit rejected the

patentee's argument "that the knowledge of one skilled in the art was sufficient to provide all of the missing information." *Genentech*, 108 F.3d at 1365.

3. The Specification Must Enable the Full Scope of the Claims

Importantly, the specification must enable the entire scope of the claims as construed by the court. *Chiron Corp. v. Genentech, Inc.*, 363 F.3d 1247, 1253 (Fed. Cir. 2004) ("[T]he enabling disclosure of the specification [must] be commensurate in scope with the claim under consideration." (quoting *In re Hyatt*, 708 F.2d at 714)); *AK Steel*, 344 F.3d at 1241 ("[A] patent specification must enable the full scope of a claimed invention."). Indeed, "[t]he enablement requirement ensures that the public knowledge is enriched by the patent specification to a degree at least commensurate with the scope of the claims." *Nat'l Recovery*, 166 F.3d at 1195-96. Thus, "[t]he scope of the claims must be less than or equal to the scope of enablement." *Id.* at 1196.

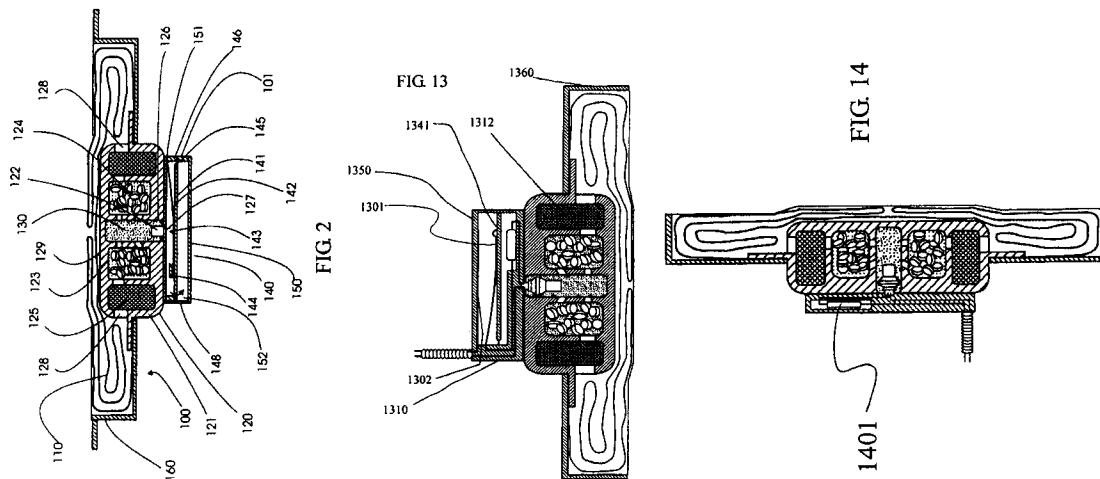
Where the scope of the claims as construed by the court includes more than one aspect of the invention, the specification must enable each aspect of the claimed invention. *Chiron*, 363 F.3d at 1256; *AK Steel*, 344 F.3d at 1244-45. For example, in *Chiron*, the Federal Circuit observed that although the specification "certainly enable[d] murine antibodies," the specification failed to "enable chimeric antibodies." *Id.* The Federal Circuit then concluded that even though the specification successfully enabled one aspect of the claimed invention, the Federal Circuit affirmed a judgment of invalidity for lack of enablement because the specification failed to enable a second aspect of the claimed invention. *Id.*; see also *AK Steel*, 344 F.3d at 1244-45 (holding that particular claims were invalid for lack of enablement where the specification failed to "enable a significant portion of the subject matter encompassed by the contested claims").

C. The Specifications Of The Asserted Patents Must Enable Electronic Sensor Systems

The claims of the '379 patent call for an "electronic sensor" and thus indisputably must be enabled for electronic crash sensors. The claims of the '202 and '038 patents have a full scope that includes electrical, electro-mechanical and mechanical type sensor systems. For example, claim 1 of the '202 patent recites, in part:

a sensor system for detecting an impact into a side of to vehicle and comprising a sensor housing and a mass arranged in said sensor housing and movable relative to said sensor housing in response to acceleration in excess of a predetermined threshold value, movement of said mass relative to said sensor housing providing an indication of a side impact for which deployment of said airbag is desired (Ex. C, col. 17, lines 41-48.)

The "movable" mass in a sensor that provides an indication of a side impact can be mechanical, as shown in Figure 2, electro-mechanical, as shown in Figure 13 or electronic, as shown in Figure 14.



In the scenario where the claimed side impact sensor systems encompass both electronic and mechanical/electromechanical embodiments, this Court and the Federal Circuit have determined that the disclosure had to enable both the electro-mechanical aspects of the claim and the electronic aspects of ATI's sensor systems. *ATI I*, 378 F.Supp.2d at 820, *aff'd*, 501 F.3d at

1285. In *ATI I*, the claims of the '253 patent were found to include both electro-mechanical sensors, as represented by '253 patent Figure 1, and the electronic sensor represented by '253 patent Figure 11. *Id.*

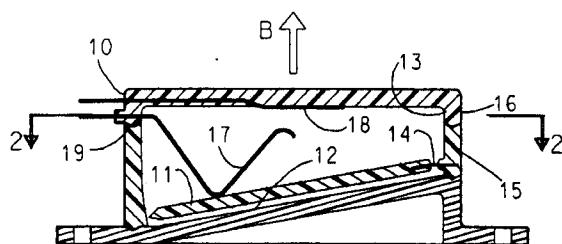


FIG. 1

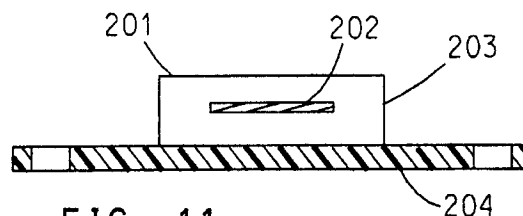


FIG. 11

Since the issue here is directly analogous to that already decided in *ATI I*, the specifications in question must enable the entire scope of the claims, including electronic sensors, to meet the enablement requirement of §112, ¶1. *See also Chiron*, 363 F.3d at 1256.

D. The Disclosure Of The '716 Patent Fails To Disclose How To Use An Electronic Sensor To Properly Detect A Side Impact Requiring Deployment Of An Airbag

The '253 patent was properly found to be invalid for failure to include enabling disclosure for electronic sensors. The '716 patent has the same level of disclosure as the '253 patent. Indeed, only one paragraph, discussing Figure 14, discloses anything having to do with the side impact crash sensor itself. As demonstrated in the below comparison chart between the '253 patent and the '716 patent, the '716 patent provides virtually no more detail than the '253 patent did with regard to how to use an electronic sensor to properly detect a side impact requiring deployment of an airbag:

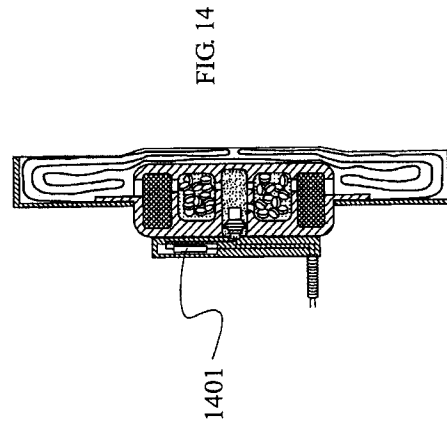
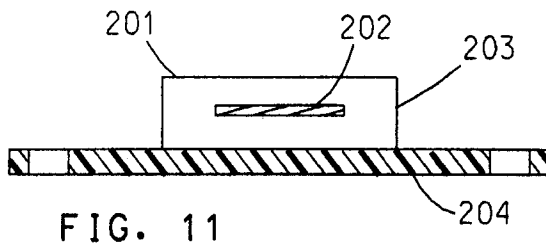
'253	'716
FIG. 11 is a conceptional view of an electronic sensor assembly 201 built according to the teachings of this invention. This sensor contains a sensing mass 202 which moves relative to housing 203 in response to the acceleration of housing 203 which accompanies a side impact	FIG. 14 is a cross section view of a self contained side impact airbag system using an electronic sensor . An electronic sensor is one in which the motion of the sensing mass is typically continuously monitored with the signal electronically amplified with the

<p>crash. The motion of the sensing mass 202 can be sensed by a variety of technologies using, for example, optics, resistance change, capacitance change or magnetic reluctance change. Output from the sensing circuitry can be further processed to achieve a variety of sensor response characteristics as desired by the sensor designer. (Ex. A, col. 10, lines 3-14.)</p>	<p>output fed into an electronic circuit which is usually a micro-processor. Electronic sensors typically use accelerometers use accelerometers which are usually make use of strain gage or piezo-electric elements shown here as 1401. Modern accelerometers are sometimes micro-machined and combined with other elements on an electronic chip. (Ex. F, col. 9, lines 51-61.)</p>
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As seen above, the '716 patent in essence discloses two things: (1) that electronic sensors are ones where motion of a sensing mass can generate a signal and (2) that the signal can be fed into a micro-processor. These are merely the same concepts that can be discerned from the '253 patent disclosure, which this Court and the Federal Circuit found to be non-enabling. Just as the '716 patent discloses that an accelerometer can be used to generate a signal of the sensing mass which can be fed into a microprocessor, the '253 patent similarly discloses that the motion of the mass can be generated by various technologies, and that the output from the sensing circuitry can be processed. Both patents utterly fail to teach how the signal would be processed to properly detect a side impact warranting deployment of an airbag.

Indeed, in the '716 patent, it is not even mentioned that the processed data in a microprocessor results in actuation of an occupant restraint. Further, not only is there insufficient detail as to how this is accomplished, e.g., with a detailed description of an algorithm, there is no *mention* of an algorithm or even "a threshold value" which appears in the claims of the asserted patents, let alone what the threshold value should be.

The corresponding figures for the "electronic sensor" in the '716 patent likewise fails to disclose any more detail than Figure 11 of the '253 patent, which the Court and Federal Circuit found not to be enabling.



As seen above, the sensor 1401 is merely a rectangular box which provides even less detail than Figure 11. Though Figure 14 adds a wire to show the sensor 1401 is connected to an inflator, it provides no detail about the sensor's operation that could explain how to properly detect a side impact requiring deployment of an airbag.

E. The '265 Patent Does Not Add Any Enabling Disclosure

Although ATI has chosen not to rely on it, the disclosure of the '265 patent adds little about electronic sensors above and beyond what is in the '716 patent. The added disclosure in the '265 patent concerning the electronic sensor in essence boils down to the following statement: "an algorithm in the micro-processor may be designed to determine whether the movement over time of the sensing mass results in a calculated value which is in excess of the threshold value based on the signal." (Ex. G, col. 15, lines 39-43.)

While this describes the putative goal, it does not explain how that goal would be achieved. Indeed, the additional disclosure in the '265 patent does nothing more than putting a name to what was lacking in the '716 and '253 patents. While the '265 discloses the term "algorithm," it does not describe what it is, how it is invoked, and the steps that would be involved in performing the algorithm. There is no mention as to what the algorithm should be, what the threshold value is, or how the algorithm would determine what the "calculated value"

is. The patent merely repeats that a sensing mass can generate a signal representative of the movement, which is analyzed to determine whether to send a deployment signal based thereon.

To show the blatant non-enabling nature of the '265 patent, the below chart takes new disclosure in the '265 not found in the '716 patent and compares it to the sole paragraph of the '253 patent, which was already found non-enabling. The chart makes clear that the additional information does nothing but provide new terminology on an insufficient disclosure.

5,231,253	6,419,265
<p>FIG. 11 is a conceptional view of an electronic sensor assembly 201 built according to the teachings of this invention. This sensor contains a sensing mass 202 which moves relative to housing 203 in response to the acceleration of housing 203 which accompanies a side impact crash. The motion of the sensing mass 202 can be sensed by a variety of technologies using, for example, optics, resistance change, capacitance change or magnetic reluctance change. Output from the sensing circuitry can be further processed to achieve a variety of sensor response characteristics as desired by the sensor designer. (Ex. A, col. 10, lines 3-14.)</p>	<p>FIG. 14 is a cross-sectional view of a self-contained side impact airbag system using an electronic sensor that generates a signal representative of the movement of a sensing mass. Unless otherwise stated or inconsistent with the following description of an airbag system with an electronic sensor, the airbag system with an electronic sensor may include the features of the airbag system described above and below. (Ex. G, col. 15, lines 16-24.)</p>
<p>FIG. 11 is a conceptional view of an electronic sensor assembly 201 built according to the teachings of this invention. This sensor contains a sensing mass 202 which moves relative to housing 203 in response to the acceleration of housing 203 which accompanies a side impact crash. The motion of the sensing mass 202 can be sensed by a variety of technologies using, for example, optics, resistance change, capacitance change or magnetic reluctance change. Output from the sensing circuitry can be further processed to achieve a variety of sensor response characteristics as desired by the sensor designer. (Ex. A, col. 10, lines 3-14.)</p>	<p>The piezo-electric element generates a signal representative of the movement of the sensing mass. (Ex. G, col. 15, lines 30-31.)</p>
<p>FIG. 11 is a conceptional view of an electronic sensor assembly 201 built according to the teachings of this invention. This sensor contains a sensing mass 202 which moves relative to</p>	<p>The signal representative of the motion of the sensing mass is recorded over time and an algorithm in the micro-processor may be designed to determine whether the</p>

<p>housing 203 in response to the acceleration of housing 203 which accompanies a side impact crash. The motion of the sensing mass 202 can be sensed by a variety of technologies using, for example, optics, resistance change, capacitance change or magnetic reluctance change. Output from the sensing circuitry can be further processed to achieve a variety of sensor response characteristics as desired by the sensor designer. (Ex. A, col. 10, lines 3-14.)</p>	<p>movement over time of the sensing mass results in a calculated value which is in excess of the threshold value based on the signal. (Ex. G, col. 15, lines 38-42.)</p>
<p>FIG. 11 is a conceptional view of an electronic sensor assembly 201 built according to the teachings of this invention. This sensor contains a sensing mass 202 which moves relative to housing 203 in response to the acceleration of housing 203 which accompanies a side impact crash. The motion of the sensing mass 202 can be sensed by a variety of technologies using, for example, optics, resistance change, capacitance change or magnetic reluctance change. Output from the sensing circuitry can be further processed to achieve a variety of sensor response characteristics as desired by the sensor designer. (Ex. A, col. 10, lines 3-14.)</p>	<p>The sensing mass may constitute part of the accelerometer, e.g., the sensing mass is a micro-machined acceleration sensing mass. In this case, the microprocessor determines whether the movement of the sensing mass over time results in an algorithmic determined value that is in excess of the threshold value based on the signal. (Ex. G, col. 15, lines 42-48.)</p>
<p>FIG. 11 is a conceptional view of an electronic sensor assembly 201 built according to the teachings of this invention. This sensor contains a sensing mass 202 which moves relative to housing 203 in response to the acceleration of housing 203 which accompanies a side impact crash. The motion of the sensing mass 202 can be sensed by a variety of technologies using, for example, optics, resistance change, capacitance change or magnetic reluctance change. Output from the sensing circuitry can be further processed to achieve a variety of sensor response characteristics as desired by the sensor designer. (Ex. A, col. 10, lines 3-14.)</p>	<p>In embodiments using an electronic sensor, the inflator may include a primer which is part of an electronic circuit including the accelerometer such that upon movement over time of the sensing mass results in a calculated value in excess of the threshold value, the electronic circuit is completed thereby causing ignition of the primer. (Ex. G, col. 15, lines 49-54.)</p>
<p>FIG. 11 is a conceptional view of an electronic sensor assembly 201 built according to the teachings of this invention. This sensor contains a sensing mass 202 which moves relative to housing 203 in response to the acceleration of housing 203 which accompanies a side impact crash. The motion of the sensing mass 202 can</p>	<p>One embodiment of the inflator means may comprise a primer. In this case, the crash sensor includes an electronic circuit including the accelerometer and the primer such that upon movement over time of the sensing mass results in a calculated value in excess of the threshold value, the</p>

<p>be sensed by a variety of technologies using, for example, optics, resistance change, capacitance change or magnetic reluctance change. Output from the sensing circuitry can be further processed to achieve a variety of sensor response characteristics as desired by the sensor designer. (Ex. A, col. 10, lines 3-14.)</p>	<p>electronic circuit is completed thereby causing ignition of the primer. (Ex. G, col. 5, lines 1-8.)</p>
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Thus, while the ‘265 disclosure includes additional language compared to what is in the ‘253 patent, the additional language is conclusory in nature and states little more than *what* is done rather than *how* it can be done. Simply stating that a mass generates a signal representative of movement and an algorithm can be used to “determine if the signal results in a calculated value in excess of the threshold value” does not provide significant detail above the general disclosure of the ‘253 patent. Moreover, as demonstrated above in Section II.G., the ‘824 patent contains even less relevant disclosure than is found in even the ‘253 patent. Accordingly, the disclosure fails to enable the asserted claims of the ‘379, ‘038, ‘202, and ‘824 patents.

F. The ‘379, ‘038, ‘202, And ‘824 Patents Fail To Provide Sufficient Disclosure To Enable A Person Of Skill In The Art To Make An Electronic Crash Sensor Suitable For Detecting Side Impacts Without Undue Experimentation For The Same Reasons The ‘253 Patent Disclosure Failed To Do So

To fulfill the enablement requirement, “the specification must teach those skilled in the art how to make and use the full scope of the claimed invention *without ‘undue experimentation.’*” *Genentech*, 108 F.3d at 1365. In *In re Wands*, 858 F.2d 731 (Fed. Cir. 1988), the Federal Circuit set forth a number of factors a court may consider in determining whether a disclosure would require undue experimentation. These factors include: (1) the quantity of experimentation necessary; (2) the amount of direction or guidance presented; (3) the presence or absence of working examples; (4) the nature of the invention; (5) the state of the prior art; (6) the relative skill of those in the art; (7) the predictability or unpredictability of the art; and (8) the breadth of the claims. *In re Wands*, 858 F.2d at 737. A court may, but need not, consider all of these

factors when determining if a disclosure is enabling. *Enzo Biochem v. Calgene, Inc.*, 188 F.3d 1362, 1371 (Fed. Cir. 1999). Each of these factors favor a finding of non-enablement.

1. Quantity of Experimentation Necessary

The question of undue experimentation is a matter of degree. “The fact that some experimentation is necessary does not preclude enablement; what is required is that the amount of experimentation ‘must not be unduly extensive.’” *Chiron*, 363 F.3d at 1253 (quoting *PPG Indus., Inc. v. Guardian Indus., Corp.*, 75 F.3d 1558, 1564 (Fed.Cir.1996)).

ATI’s contentions reveal that a great deal of experimentation would have been necessary for a person of skill in the art to have made or used electronic side impact sensors systems. For example, in ATI I, ATI repeatedly stated that no one had previously used an acceleration sensor to successfully detect side impact crashes during the ‘253 prosecution history. (*See, e.g.*, Ex. L (12/27/90 Am. at 12; 5/1/92 Am. at 10-11; 11/13/92 Am. at 5).) In a response to an office action of the Patent Office of the ‘253 patent, ATI characterized such use of acceleration “crash switch sensors” as “novel” and a “breakthrough in side impact crash sensing.” (Ex. L (12/27/90 Am at 12, 14).) Significantly, ATI also argued that it was not possible to create a side impact sensor by taking a front impact acceleration sensor and merely placing it on the side of a vehicle. (Ex. L (12/27/90 Am. at 14-19; 5/1/92 Am. at 10; 10/9/91 Am. at 6-9).)

Little has changed between statements ATI made during prosecution of the ‘253 patent family and the later side impact sensor system family asserted in this litigation. Indeed, ATI still contends that “no one before the inventors of the patents in suit were able to recognize that an accelerometer-type sensor could be made to work in a side impact setting.” (Ex. E (Response to Interrogatories 1-6) at 7.) Moreover, in the background section of the patents at issue, ATI explains the differences between side impacts and frontal impacts as follows: “side impact sensors must trigger in a very few milliseconds when there is no significant signal at any point in

the vehicle except where the car is crushing or at locations rigidly attached to this crush zone.” (See, e.g., Ex. B, col. 2, lines 23-26.) ATI then touts how the alleged invention of the asserted patents solves this problem. “The realization that a moving mass sensor was the proper method for sensing side impacts has now led to the development of the side impact self contained airbag system of this invention.” (Ex. B, col. 2, lines 36-39.)

ATI has made the same contentions in the file history of the side impact sensor patent family of the accused products. For example, in the prosecution history of the 6,685,218 patent – the direct parent of the ‘038 patent that also claims priority to September 16, 1993 – ATI responded to the examiner’s rejection of the claims over the prior art by representing that the “use of a mass whose movement is used for sensing side impacts is novel over the prior art.” (Ex. I (Response to Office Action dated September 11, 2002) at 2 and 3 (emphasis in original).) ATI further asserted that there “is a very significant difference in response times between frontal impact crash sensor and side impact crash sensors” and that “inertial sensors [i.e., having movable masses] were not historically considered to be useful for sensing acceleration in only a lateral direction resulting from the side impacts in view of a slow actuation of such inertial sensors.” (Ex. J (Response to Office Action dated August 28, 2003) at 10, 11-12.) Thus, like in ATI I, ATI continues to assert that use of accelerometers in side impact sensors was novel with respect to the patents at issue.

Based on ATI’s own assertions, nobody had used side impact sensors with a moveable mass in the art prior to the time it filed the first application in the side impact sensor system family ultimately leading to the patents in suit. But, by failing to disclose, either in the ‘716 or subsequent disclosures, how movement of a mass is monitored such that a “sensor initiates deployment of an occupant restraint based on movement of the mass,” ATI has not properly

shown how such sensors initiate deployment. This lack of disclosure is particularly fatal in view of the fact that “side impact sensors must trigger in a very few milliseconds when there is no significant signal at any point in the vehicle except where the car is crushing or at locations rigidly attached to this crush zone” as described in the patents’ background section (*see, e.g.*, Ex. B, col. 2, lines 23-26).

Thus, as in *ATI I*, to properly design an algorithm to work with accelerometer output of side impacts would have required undue experimentation that was far beyond routine, because if skilled persons in the art could not succeed at using a frontal impact sensor to detect side impacts and ignite airbags, then undue experimentation necessarily would have been required. *ATI I*, 378 F.Supp.2d at 815 (E.D. Mich. 2005).

2. The Amount of Direction or Guidance Presented

As discussed above, the ‘716 specification provides no direction or guidance as to how to actuate an airbag in response to output of an accelerometer. The ‘265, ‘218 and ‘038 patent disclosures use words such as “algorithm” and “threshold values,” but none provide even general guidance as to how to implement such things in light of the alleged novelty of using accelerometer output in side impact crash sensing. The ‘824 patent provides even less disclosure and includes no disclosure on how to properly detect side impacts. Thus, like in *ATI I*, where this Court noted that the ‘253 patent failed to show any “structure or suggestions as to how the output from the circuitry could be processed to achieve the desired and required response characteristics necessary for side impact sensing or what response characteristics would be desired by the sensor’s designer,” the patent disclosures at issue likewise show no structure or suggestions. *ATI I*, 378 F.Supp.2d at 817 (E.D. Mich. 2005).

3. The Presence or Absence of Working Examples

It cannot be disputed that the asserted patents fail to include any working examples. Not a single representative example is disclosed. The closest thing to an example of an electronic crash sensor in the '379, '038, and '202 patents is in Figure 15, which depicts a sensor having a circuit that can be open or closed. However, nowhere in Figure 15, or anywhere else in the patents, is there disclosure of an algorithm or any other logic mechanism that can decide when the motion of a movable mass is sufficient to set off an airbag. The '824 patent has no working examples either.

4. The Nature of the Invention

The nature of the invention involves using accelerometers as side impact sensors which, according to ATI, is a key point of novelty of the invention. As the Federal Circuit has held, "[i]t is the specification, not the knowledge of one skilled in the art, that must supply the novel aspects of an invention" to fulfill the enablement requirement. *Genentech*, 108 F.3d at 1366. Accordingly, the nature of the invention would be unpredictable as the novel part of ATI's invention is what has not been described.

5. The State of the Prior Art & The Relative Skill of Those in the Art

The level of ordinary skill in the art as defined by ATI would not have been sufficient for such a person to have had the knowledge or ability to perform some of the necessary experimentation. In ATI I, ATI defined the level of skill in the art as "a person having a four-year degree in mechanical, electro-mechanical or automotive engineering, plus several years [of] experience in the field or the equivalent." *See ATI I*, 378 F.Supp.2d at 801-02 (E.D.Mich. 2005) ("Plaintiff has repeatedly maintained that 'the level of ordinary skill in the art is defined by a person having a four-year degree in mechanical, electro-mechanical or automotive engineering, plus several years [of] experience in the field or the equivalent.'") ATI has asserted that it will

use this same level of skill in the art for the patents asserted in this action. (Ex. M Deposition of David Breed, June 23-24, 2009 (the “Breed Dep.”) at 91.) Because the level of skill in the art for the asserted patents is the same as for the ‘253 patent and because the asserted patents contain no more useful disclosure above and beyond the disclosure in the ‘253 patent with respect to electronic sensors, there is nothing to fill in gaps that rendered the ‘253 patent non-enabling in the presently asserted patents.

Solving the relevant side impact crash sensor problems in light of the state of the prior art was not within the knowledge of a person of skill in the art. For example, according to ATI, use of a mass whose movement is used for sensing side impacts is novel over the prior art.” (Ex. I (Response to Office Action dated September 11, 2002) at 2 and 3 (emphasis in original).) Tellingly, ATI itself has never made an electronic side impact sensor as of 2005. (Ex. N (Deposition of David Breed from the ATI I Litigation, January 6, 2005) at 169:25-170:8.) Additionally, no algorithm had been developed and, indeed, several PhDs were needed to develop just such a thing. (*Id.* at 317:7-18.) Developing such an algorithm therefore required significant development, research and testing.

6. The Predictability or Unpredictability of the Art

As this Court noted in ATI I, “Plaintiff distinguished its invention from the existing prior art associated with frontal crash sensors. The adaptation of acceleration type sensors for use to sense side impact crashes was allegedly novel and unobvious according to Plaintiff’s own representations. The very basis for Plaintiff’s claims of novelty tends to show the unpredictability of the art.” *ATI I*, 378 F.Supp.2d at 819 (E.D. Mich. 2005). Since ATI made the same assertion during the prosecution history of the ‘218 patent, a like finding is suitable here.

7. The Breadth of the Claims

As discussed above, the full scope of a claim must be enabled. The asserted claims of the patents at issue embrace electronic side impact crash sensors and in many instances mechanical and electromechanical embodiments and thus attempt to claim a relatively broad class of sensors. This factor thus tends to favor a finding that undue experimentation would be necessary.

Thus, for all the reasons set forth above, the nature and quantity of experimentation necessary for a person of skill in the art to have made or used the claimed electronic side impact sensor system would have amounted to “undue experimentation.” In sum, the ‘379, ‘038, and ‘202 patents provide no working examples of an electronic side impact crash sensor, no teaching of what the algorithm is that is needed to properly detect side impacts, no teaching on how such an algorithm would be invoked, no teaching of the steps that would be involved in performing the algorithm, no teaching of what the threshold value is, and no teaching of how the algorithm would determine what the “calculated value” is. These patents just continually repeat that a sensing mass can generate a signal representative of the movement, which is analyzed to determine whether to send a deployment signal based thereon without any useful information. The ‘824 patent provides even less disclosure. This complete lack of disclosure in the asserted patents is fatal to ATI’s contention its claims are sufficiently enabled, particularly in view of ATI’s repeated representations that the use of electronic sensors having movable masses to detect side impacts was novel. For these reasons, the asserted claims of the patents are not enabled and should be deemed invalid.

G. ATI Cannot Now Argue That Knowledge Of Electronic Frontal Impact Sensors Would Have Enabled An Electronic Side Impact Sensor

As in ATI I, ATI cannot now argue that a person of skill in the art could have made or used an electronic side impact sensor based on knowledge of other electronic sensors, such as

frontal impact sensors. According to ATI, at the time the '253 patent was filed, electronic sensors would not have been suitable for sensing side impacts. Moreover, ATI testified that such an electronic frontal-impact sensor could not have been used to successfully detect side impacts by merely changing its algorithm. (Ex. N at 173:6-10.) ATI has claimed that an electronic frontal-impact sensor would not have worked to detect side impacts because: (1) "[t]he accelerometer would have the wrong characteristics" (*Id.* at 173:12); (2) "the sensor itself wouldn't be sufficiently rugged" (*Id.* at 173:13-14); (3) the accelerometer would "be too sensitive" (*Id.* at 174:2-5); and (4) the sensor probably would have been "too slow" (*Id.* at 174:13-16).

ATI also stressed that it was not possible to create a side impact sensor by taking an acceleration sensor used for sensing frontal impacts and merely placing it on the side of a vehicle. (Ex. L (10/27/90 Am. at 14-19; 5/1/92 Am. at 10; 10/9/91 Am. at 6-9).) For example, ATI also stated to the Patent Office in the '253 prosecution history that "no one (except the applicants) believed ... that acceleration sensors could be used to detect side impacts." (Ex. L (5/1/92 Am. at 10.) The asserted patents provide no additional disclosure that explain how to remedy the admission that an electronic frontal-impact sensor would not have worked to detect side impacts because the accelerometer would have the wrong characteristics, would not be sufficiently rugged, would be too sensitive and would have been too slow. According to ATI, merely taking a known frontal impact acceleration sensor and placing it on the side of a vehicle would not yield a functional side impact sensor.

ATI has repeated the assertion that "use of a mass whose movement is used for sensing side impacts is novel over the prior art" in the prosecution history of the '218 patent, a parent of the '379, '038, and '202 patents. (Ex. I (Response to Office Action dated September 11, 2002) at 2 and 3 (emphasis in original).) Thus, any argument by ATI that knowledge of electronic frontal impact

sensors would have enabled a person of skill in the art to make or use an electronic side impact sensor is without merit. The same holds true for the '824 patent, which contains absolutely no disclosure on how to render a crash sensor suitable for detecting side impacts and how to use that sensor data to properly determine if deployment of an airbag is warranted.

IV. CONCLUSION

For the forgoing reasons, defendants respectfully request that their motion for summary judgment of invalidity of the '379, '038, '202 and '824 patents for lack of enablement be granted.

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CERTIFICATE OF SERVICE

I hereby certify that on July 1, 2009, I electronically filed the foregoing documents with the Clerk of the Court for the Eastern District of Michigan using the ECF System which will send notification to the registered participants of the ECF System as listed on the Court's Notice of Electronic Filing. I also hereby certify that hard copies of documents filed under seal in connection with this electronic filing have been sent via U.S. Mail to all counsel.

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